Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_

**Notes Analysis Worksheet**

Ms. Ottolini, AP Biology

**Unit :** 1 (Microevolution) **Part:** 1 (Evolution Basics)

**Vocabulary:** Choose three sets of two vocabulary words from your notes. Define each term in the set and identify a connection between the two terms in the set. The definitions and connections must be in your own words and in complete sentences.

1.

Terms: Theory of Use and Disuse and Theory of the Inheritance of Acquired Characteristics

Definitions and Connection:

Both of these theories were proposed by Lamarck and both were incorrect. The theory of use and disuse says that organisms can change their physical traits based on how much they use a particular structure, and the theory of the inheritance of acquired characteristics says that these physical changes can be passed down to offspring.

2.

Terms: Natural Selection and Fitness

Definitions and Connection:

Fitness is defined as the ability of an organism to survive and reproduce based on its inherited favorable traits. Natural selection, a theory proposed by Charles Darwin, states that the organisms that are most fit will reproduce more, resulting in a higher frequency of favorable traits in the next generation.

3.

Terms: Homologous structures and analogous structures

Definitions and Connection:

Homologous structures and analogous structures are types of physical traits that can be used to show evidence for evolution. Homologous structures found in two different organisms are often similar because the structure was found in a common ancestor of the two organisms. Analogous structures found in two different organisms are often similar because they are used for a similar purpose (i.e. the structure evolved as a result of requirements in the environment), though the two organisms did not have a recent common ancestor.

**Ideas / Concepts:** Identify and describe three key ideas / concepts from the notes. Your key ideas / concepts must be in your own words and in complete sentences.

1. Evolution is a change in the frequency of traits in a population of organisms over several generations.

2. Natural selection can cause evolution.

3. Evidence to support the theory of evolution ranges from molecular data to the fossil record to comparisons of physical structures in living organisms.

**Supporting Evidence:** Choose one of the key ideas / concepts listed above (or choose one that is not on the list) and identify at least one piece of evidence from the notes that supports this idea. You must describe the evidence in your own words and in complete sentences. *For example, transitional fossils in the fossil record provide evidence for the idea that populations of organisms change over time (i.e. evolution).*

Key Concept – Artificial selection provides evidence for evolution.

Evidence from the Notes – Artificial selection occurs when humans “select” the fittest traits and choose which animals get to reproduce. In the next generation, therefore, there will be more individuals with favorable traits. (Remember: Evolution is a change in the population over time.) For example, humans have artificially selected Bassett hounds that are short and long to reproduce, resulting in the evolution of the breed.

**Cause and Effect:** Identify one example of a biological event and an associated effect from the notes. Draw a clear connection between the cause and effect. You must describe the cause and effect in your own words and in complete sentences.

One of the characteristics of life states that organisms respond to stimuli. For example, when a human’s body temperature increases (cause), the response is sweating to bring the temperature back down to a set point.

**Asking Questions:** Pose two clarification or extension questions about the notes. Several randomly-selected students will be asked to share their questions in class. Clarification questions allow you to inquire about concepts from the notes that you are having trouble understanding. Extension questions allow you to inquire about related concepts, examples, or pieces of evidence that are not directly discussed in the notes. You do not need to answer the questions on this worksheet.

1. Why can’t organisms pass on traits acquired during their lifetimes (ex: larger muscles in humans)?

2. Why is antibiotic resistance in bacteria an example of evolution?